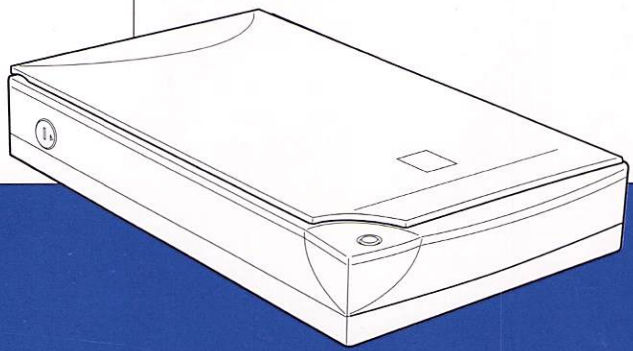
EPSON

Color Image Scanner



Perfection 610

User's Guide

4010809-00
M-03

Where to Find Information

This User's Guide

This guide leads you through the scanner setup, tells you how to use the scanner, and how to make basic scans.

It also leads you through the EPSON scanner software installation, tells you how to use the Start Button function, and how to make basic software settings. Finally, it offers troubleshooting tips, customer support information and calibrating information.

Information on EPSON Scanner Software for Windows

Online help provides you with detailed information on EPSON TWAIN. Access online help from the EPSON Scanner folder, or click the Help button in the EPSON TWAIN dialog box.

Information on PageManager and other Software

See the PageManager for EPSON, and other software documentation.

EPSON® *Perfection* 610

Color Image Scanner

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User's Guide

Declaration of Conformity

Manufacturer:	SEIKO EPSON CORPORATION
Address:	3-5, Owa 3-chome, Suwa-shi, Nagano-ken 392-8502 Japan
Representative:	EPSON EUROPE B.V.
Address:	Prof. J. H. Bavincklaan 5 1183 AT Amstelveen The Netherlands

Declares that the Product:

Product Name:	Image Scanner
Model:	G750A

Conforms to the following Directive(s) and Norm(s):

Directive 89/336/EEC:

EN 55022 Class B
EN 61000-3-2
EN 61000-3-3
EN 50082-1
IEC 801-2
IEC 801-3
IEC 801-4

Directive 73/23/EEC:

EN 60950

July, 1999

H. Horiuchi
President of EPSON EUROPE B.V.

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Safety Instructions

Important Safety Instructions

Read all these instructions and save them for later reference. Follow all warnings and instructions marked on the scanner.

- Unplug the scanner before cleaning. Clean with a damp cloth only. Do not spill liquid on the scanner.
- Do not place the scanner on an unstable surface, or near a radiator or heat source.
- Use only the type of power source indicated on the scanner's label.
- Connect all equipment to properly grounded power outlets. Avoid using outlets on the same circuit as photocopiers or air control systems that regularly switch on and off.
- Do not let the power cord become damaged or frayed.
- If you use an extension cord with the scanner, make sure the total ampere rating of the devices plugged into the extension cord does not exceed the cord's ampere rating. Also, make sure the total ampere rating of all devices plugged into the wall outlet does not exceed the wall outlet's ampere rating.
- Except as specifically explained in this *User's Guide*, do not attempt to service the scanner yourself.
- Unplug the scanner and refer servicing to qualified service personnel under the following conditions:

If the power cord or plug is damaged; if liquid has entered the scanner; if the scanner has been dropped or the case damaged; if the scanner does not operate normally or exhibits a distinct change in performance. (Do not adjust controls that are not covered by the operating instructions.)

- ❑ If you plan to use the scanner in Germany, observe the following:

  To provide adequate short-circuit protection and over-current protection for this scanner, the building installation must be protected by a 16 Amp circuit breaker.

  Note for German-speaking users:
  Bei Anschluß des Scanners an die Stromversorgung muß sichergestellt werden, daß die Gebäudeinstallation mit einem 16 A-Überstromschalter abgesichert ist.

- ❑ If you will not use the scanner for an extended time, be sure to unplug it.

Warnings, Cautions, and Notes

***Warnings** must be followed carefully to avoid bodily injury.*

***Cautions** must be observed to avoid damage to your equipment.*

***Notes** contain important information and useful tips on the operation of your scanner.*

ENERGY STAR Compliance

As an ENERGY STAR Partner, EPSON has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

The International ENERGY STAR Office Equipment Program is a voluntary partnership with the computer and office equipment industry to promote the introduction of energy-efficient personal computers, monitors, printers, fax machines, copiers, and scanners, in an effort to reduce air pollution caused by power generation.

For United Kingdom Users

Safety information

Warning: *This appliance must be earthed. Refer to the rating plate for voltage and check that the appliance voltage corresponds to the supply voltage.*

Important: *The wires in the mains lead fitted to this appliance are coloured in accordance with the following code:*

Green and yellow — Earth
Blue — Neutral
Brown — Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The green and yellow wire must be connected to the terminal in the plug which is marked with the letter E or with the earth symbol (⏚).

The blue wire must be connected to the terminal in the plug marked with the letter N.

The brown wire must be connected to the terminal in the plug marked with the letter L.

If damage occurs to the plug, replace the cord set or consult a qualified electrician.

Replace fuses only with a fuse of the correct size and rating.

Chapter 1

Getting to Know Your Scanner

Features 1-2

Unpacking the Scanner 1-3

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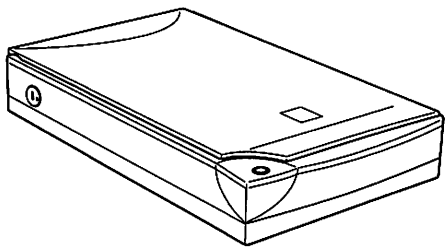
Features

The EPSON Perfection 610 scanner offers the following features:

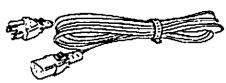
- Maximum optical resolution of 600 dots per inch (dpi) for main scanning, and 2400 dpi with micro step for sub scanning (36-bit input, 24-bit output).
- Start Button control for shortcut scanning operation.
- Light body with A4/Letter size scanning area.
- Full color or grayscale scanning. Capture your images with over 16 million colors; or up to 256 shades of gray and black and white.
- EPSON TWAIN lets you take full advantage of your scanner's advanced features.
- EPSON TWAIN's Unsharp Mask option automatically sharpens the image to provide crisp detail.
- EPSON TWAIN's De-screening option automatically removes unwanted moiré patterns from scanned images for higher quality output.

Unpacking the Scanner

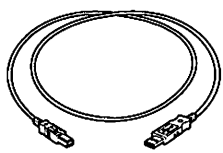
Your Perfection 610 comes shipped with CD-ROMs which include the driver software that runs your scanner, and some additional items.



scanner



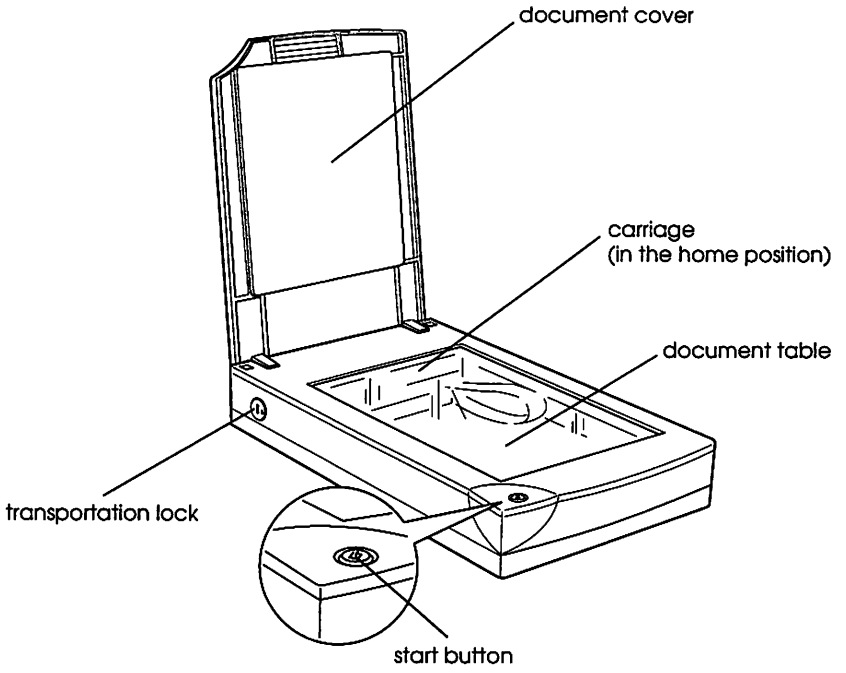
power cord

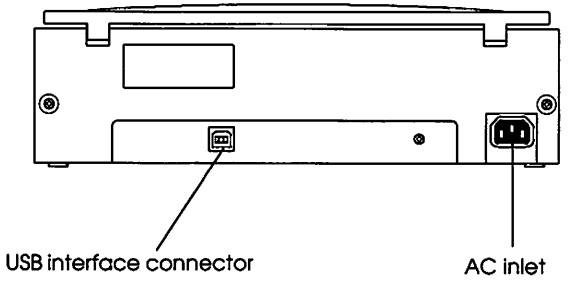


USB interface cable

Depending on the country of purchase, the power cord may come attached to the scanner. The shape of the AC plug also varies, so make sure the plug included is the correct shape for the electrical outlet in your country.

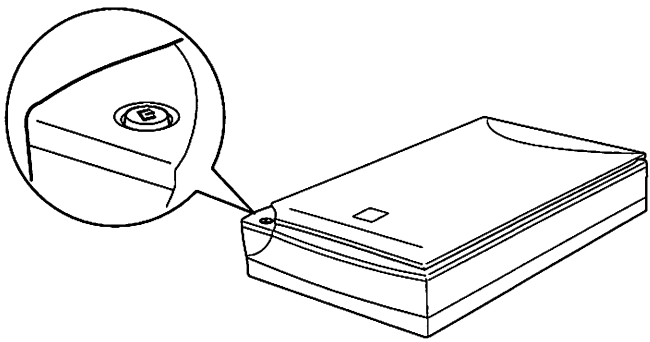
Scanner Parts





Button

The scanner has one button, the Start button.



Button

Button	Function
Start	The hardware switch to execute scanning and transfer the scanned image to assigned application software. To use this feature, you need to setup software. See Chapter 5 for more details.

Chapter 2

Setting Up the Scanner

2

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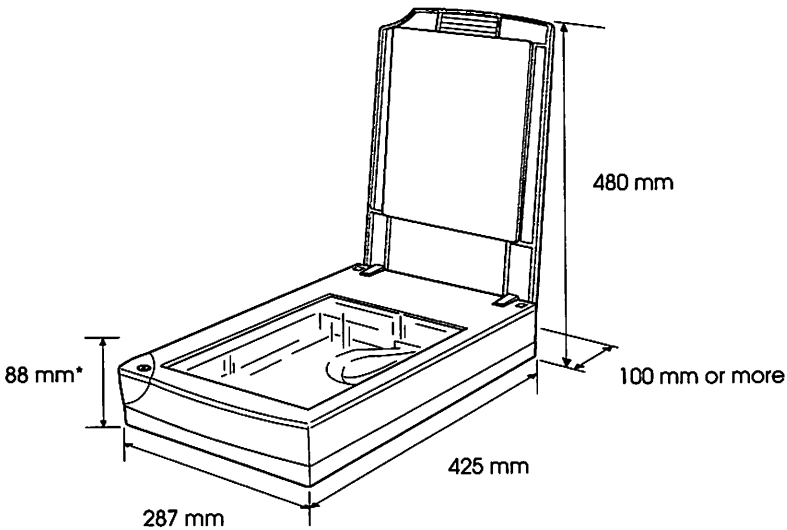
Choosing a Place for the Scanner

Follow the guidelines below when selecting a location for your scanner:

- ❑ Place the scanner on a flat, stable surface. The scanner will not operate properly if it is on an angle.
- ❑ Place the scanner close enough to the computer for the interface cable to reach it easily.
- ❑ Place the scanner near a wall outlet where the power cord can be easily unplugged.

  Note for French-speaking users:
  Placez le scanner près d'une prise de courant où la fiche peut-être débranchée facilement.

- ❑ Allow space behind the scanner for the cables, and space above the scanner so that you can fully raise the document cover.



* When document cover is closed.

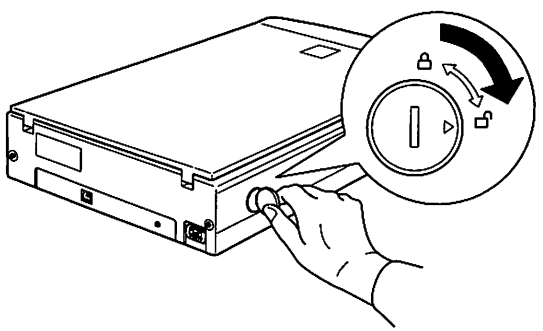
- Keep the scanner away from high temperatures, humidity and excessive dirt or dust. Also avoid using or storing the scanner in places subject to rapid changes of temperature and humidity.
- Keep the scanner away from direct sunlight and strong light sources.
- Avoid places subject to shocks and vibrations.

Releasing the Transportation Lock

Before connecting the scanner to a power source, you must release the transportation lock.

1. Place the scanner on a flat, stable surface with the back facing you.

2. Turn the transportation lock on the right side to the unlocked position using a coin or similar object, as shown below.

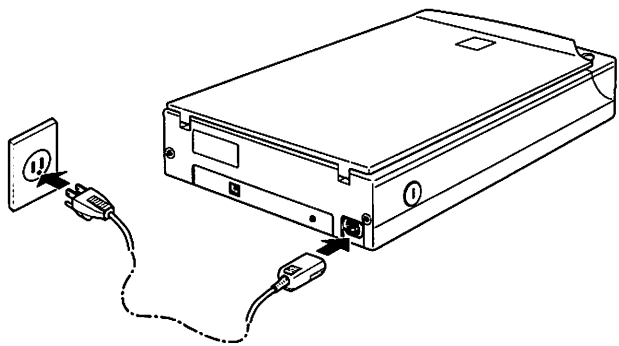


Note:

- *When you cannot turn the transportation lock because of excessive resistance, plug the scanner in, then, after the fluorescent lamp on the carriage starts flashing, unplug the scanner, and try again. See the next section to plug in the scanner.*

- *Return the transportation lock to the locked position when transporting the scanner.*

Plugging in the Scanner



If the power cord is not attached to the scanner, connect it to the AC inlet on the back of the scanner, and plug the other end into a properly grounded electrical outlet.

Caution:
It is not possible to change the scanner's voltage. If the label on the back of the scanner does not show the correct voltage for your country, contact your dealer. Do not plug in the power cord.

Initialization

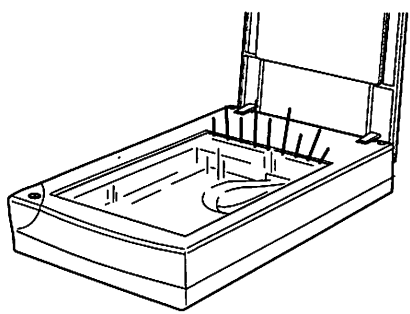
Before connecting the scanner to your computer, follow the steps below to make sure that the scanner is operating properly.

1. If the scanner is plugged in, unplug the scanner and wait 10 seconds.

2. Open the document cover so you can see the operation of the scanner during initialization (startup).

3. Plug in the scanner.

4. Make sure the fluorescent lamp on the carriage turns on, and the carriage moves slightly.



5. The fluorescent lamp stays on, meaning the scanner has completed initialization.

6. Unplug the scanner.

If the scanner does not work as described, make sure the power cord is firmly plugged in and that you have released the transportation lock, then try again.

Note:

- *The scanner will turn off the fluorescent lamp if it does not receive any commands from the computer within 10 minutes.*
- *Be sure to unplug the scanner once you have finished using it.*

Caution:
Whenever you unplug the scanner, wait at least 10 seconds before plugging it back in. Rapidly plugging and unplugging the scanner can damage the scanner.

Connecting the Scanner to Your Computer

Your PC must be preinstalled with Windows 98, and have a working USB port. For Macintosh, you will need a Power Macintosh G3 or iMac running system 8.5 or later, or system 8.1 with iMac Update 1.0. See Chapter 3 "System Requirements" for details.

Note:
If you connect your scanner through more than one hub, your system may not work properly. In this case, try connecting the scanner directly to the computer's USB port. Also, your system may not work properly if you use a USB cable other than that supplied by EPSON.

Understanding USB connections

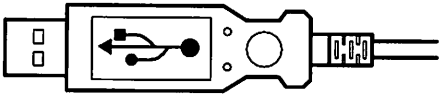
USB Cables

USB cables enable you to connect or remove peripherals to and from your computer easily, without having to shut down and restart the system each time a peripheral is plugged in or unplugged.

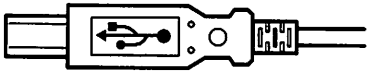
Note:
Do not connect or disconnect USB cables when the scanner is in use.

USB cables have two different connectors at each end.

Type A connects to your computer.



Type B connects to your scanner.



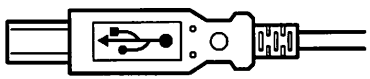
USB hub

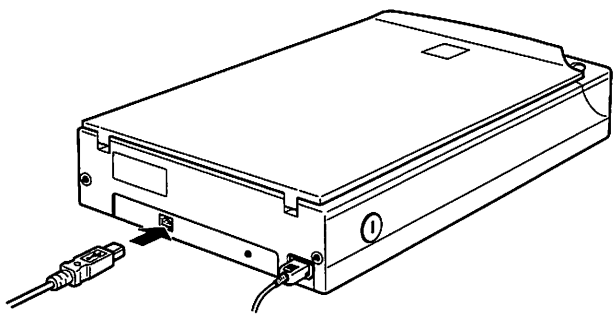
You can also use a USB hub, allowing you to increase the number of USB ports and therefore connect several peripherals.

Connecting the scanner

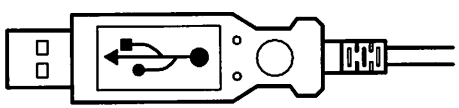
To connect the scanner to your computer or USB hub:

1. Connect one end of the cable (Type B) to the USB port on the back of the scanner.





2. Connect the other end of the cable (Type A) to the USB port on your computer, or USB hub.



Note:

- *USB cables enable you to connect the scanner whether your computer is on or off. If you connect the scanner while your computer is on, the "Add New Hardware Wizard" dialog box (Windows) or a message telling you that the scanner driver needs to be installed (Macintosh) will appear. When this happens, follow the instructions in Chapter 3, then install the software.*

- ❑ *Connect the USB cable to your computer, then install or start the scanner software. Do not connect or disconnect the USB cable while the scanner software is open.*

Installing the Scanner Software

After setting up the scanner as described above, you need to install the scanner software before you use the scanner to scan documents. For details on setting up the scanning software, see the next chapter.

Chapter 3

Installing the Software

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System Requirements

Before installing the scanner software, make sure that your system meets the following requirements.

For PCs

System:	Microsoft® Windows® 98 preinstalled
Interface:	The computer's USB port (TYPE A receptacle)
Display:	VGA or higher resolution monitor 640 × 480 screen resolution (800 × 600 or higher recommended), and 256 color (65,000 color or higher recommended)

Note:
Color and tone reproduction are subject to the display capability of your computer system, including the video card, display monitor, and software. See the product documentation for details.

For Macintosh computers

System:	Apple® Power Macintosh® G3 computer or iMac™ running system 8.5 or later, or system 8.1 with iMac Update 1.0
Interface:	Macintosh USB

Note:
You cannot use a serial interface.

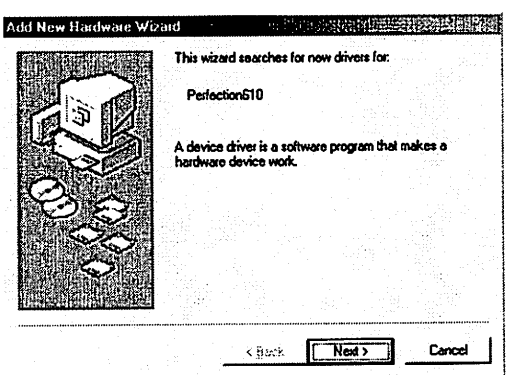
Display: Color Monitor, 640 × 480 screen resolution (or higher recommended), and 256 color (32,000 color or higher recommended)

Note:
Color and tone reproduction are subject to the display capability of your computer system, including the video card, display monitor, and software. See the product documentation for details.

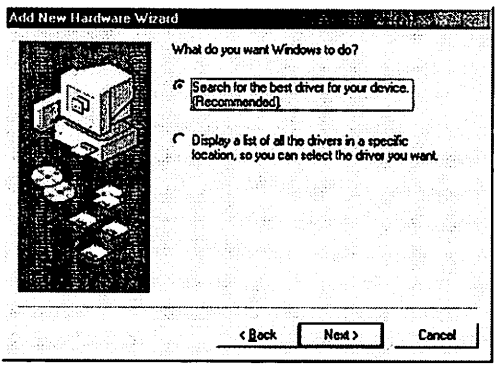
Installing the Scanner Software for Windows

After connecting the scanner to your computer, install the scanner software from the CD-ROM.

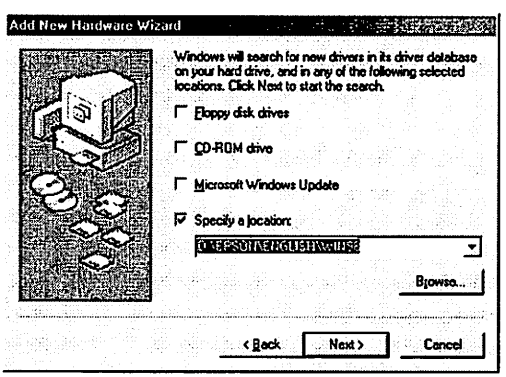
1. Make sure that the scanner is plugged in and on.
2. Turn on the computer, and start Windows.
3. When the dialog box below appears, insert the scanner software CD in the CD-ROM drive, then click Next.


Add New Hardware Wizard
This wizard searches for new drivers for:
Perfection610
A device driver is a software program that makes a hardware device work.
< Back
Next >
Cancel

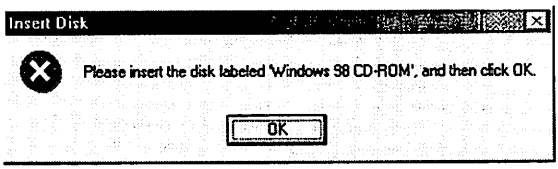
4. Select the Search for the best driver for your device option, then click Next.


Add New Hardware Wizard
What do you want Windows to do?
Search for the best driver for your device. (Recommended)
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

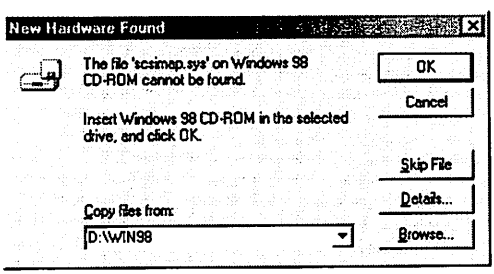
5. Make sure the Specify a location check box is selected, then browse and select or type in the CD-ROM drive letter, Epson folder, the folder of your preferred language, and Win98 folder as the location, as shown below, and click Next.


Add New Hardware Wizard
Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
CD-ROM drive
Microsoft Windows Update
Specify a location:
Browse...
< Back
Next >
Cancel

6. Follow the instructions on the screen. Depending on your system, you may be asked to insert the Windows 98 CD-ROM.



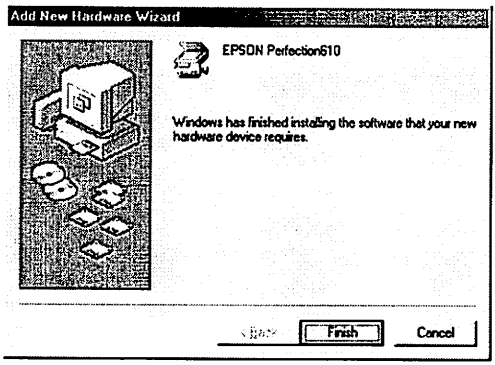
Make sure that the correct CD-ROM drive letter and the Win98 folder are specified in the Copy files from: box as shown below.



7. The EPSON Screen Calibration utility automatically starts. Follow the instructions on the screen. For details, see page 3-10.

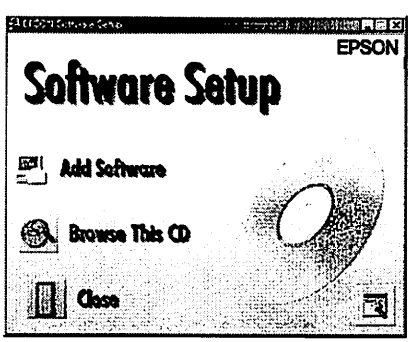
Note:
If the EPSON Screen Calibration utility doesn't start automatically after installing the scanner software, see page 3-10 to calibrate your screen.

8. When the following dialog box is displayed, click Finish.


Add New Hardware Wizard
EPSON Perfection610
Windows has finished installing the software that your new hardware device requires.
Finish
Cancel

This completes the EPSON TWAIN installation, next you will install utility and application software from the CD-ROM.

1. Double-click the My Computer icon.
2. Double-click the CD-ROM drive icon. A dialog box asking for your preferred language appears on your screen. If no dialog box appears, double-click the Cdsetup.exe icon.
3. Select your preferred language and click OK.
4. You will see the following dialog box. Click Add Software.



5. You will see a list of software in the list box. Click to select the names of the software you want to install in your PC. Make sure Presto! PageManager for EPSON is selected to be installed. Descriptions of the software can be found in the software documentation, or on the CD-ROMs that come with your scanner.

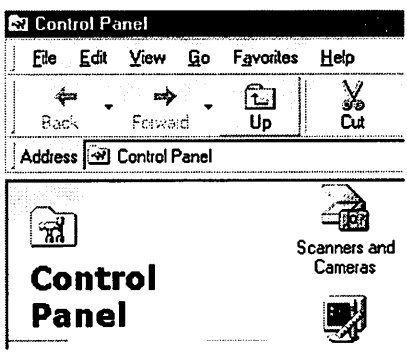
6. Click OK. Then follow the instructions on the screen.

   The setup program installs the selected software.

Note:

- *If folders for the applications on the CD-ROM contain README files, double-click and read them as they contain up-to-date information regarding the software.*

- *You will find the Scanners and Cameras icon shown below in the Control Panel after EPSON TWAIN is installed.*



Installing the Scanner Software for Macintosh

After connecting the scanner to your Macintosh computer, install the EPSON scanner software; EPSON TWAIN, EPSON Scanner Monitor, PageManager for EPSON and other application software from the CD-ROM. Follow the steps below.

Note for iMac users:

- ❑ *If you are using Mac OS 8.1, you need to install iMac Update before installing the scanner software. This is available online from the Apple Web site, where complete information on the software is provided.*

1. Make sure your scanner is plugged in and on. Then turn on the computer.

   When the message telling you that the scanner driver needs to be installed appears, click OK.

2. Insert the CD in the CD-ROM drive.

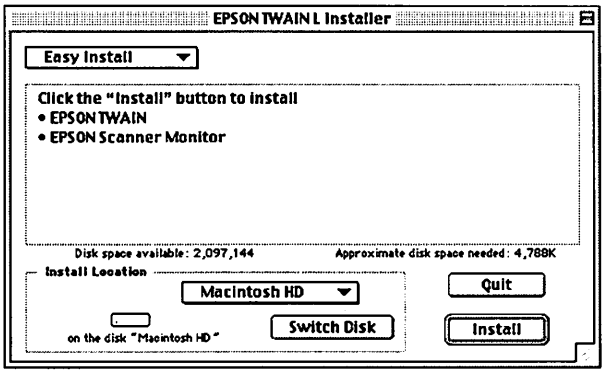
3. Double-click the EPSON TWAIN folder.

   The EPSON TWAIN folder contains multiple-language versions of the software. Double-click the folder of your preferred language.

4. Double-click the EPSON TWAIN L Installer icon.

EPSON TWAIN L Installer

5. The installer software shows a dialog box. Click Install in the dialog box that appears, and follow the instructions on the screen.



When you have finished the entire installation, the EPSON Screen Calibration utility automatically starts. Go to page 3-10 for instructions. After restarting your Macintosh continue from step 6 below to install other software.

6. Double-click the folder that contains the software you want to install.

   The Software folder contains multiple-language versions of the software. Double-click the folder of your preferred language.

7. Double-click the installer icon to start the installation program. Then follow the instructions on the screen.

Calibrating Your Screen

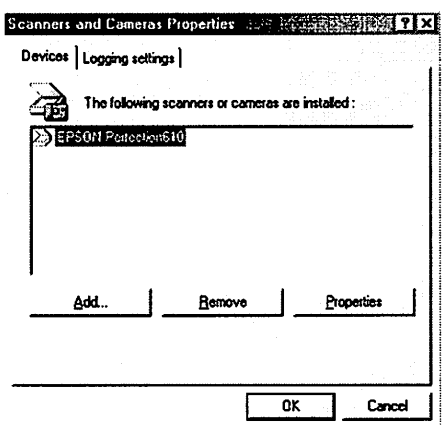
When you install EPSON TWAIN, the EPSON Screen Calibration utility is automatically installed.

EPSON Screen Calibration calibrates your monitor to ensure the tone and contrast on your screen closely match the original image. Be sure to calibrate your screen before starting to use your scanner, and anytime you switch to a different monitor.

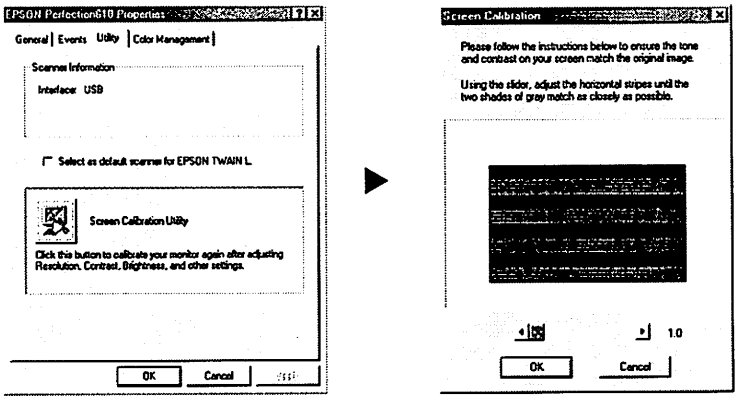
For information regarding color and output device calibration, see the *Color Guide*.

For Windows 98 users

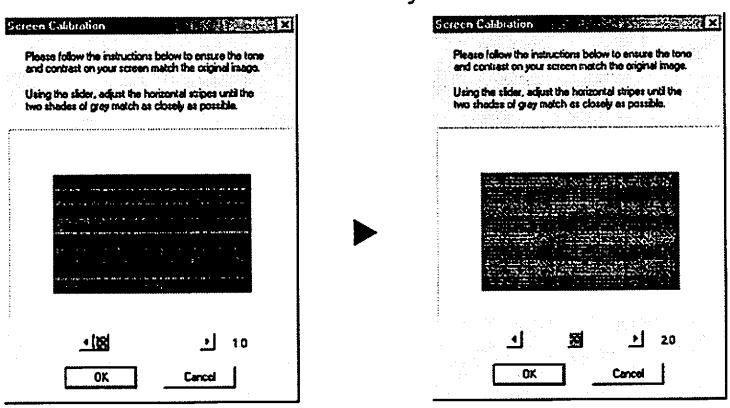
1. Double-click the Scanners and Cameras icon in the Control Panel. The Scanners and Cameras Properties dialog box appears. Click the Properties button.



2. Click the Utility tab, then click the Screen Calibration Utility icon. The Screen Calibration dialog box appears.


EPSON Perfection610 Properties
General | Events | Utility | Color Management |
Scanner Information
Interface: USB
Select as default scanner for EPSON TWAIN L
Screen Calibration Utility
Click this button to calibrate your monitor again after adjusting Resolution, Contrast, Brightness, and other settings.
OK
Cancel
Screen Calibration
Please follow the instructions below to ensure the tone and contrast on your screen match the original image.
Using the slider, adjust the horizontal stripes until the two shades of gray match as closely as possible.
1.0
OK
Cancel

3. Look at the screen from a distance and move the slider right or left until the two tones closely match.

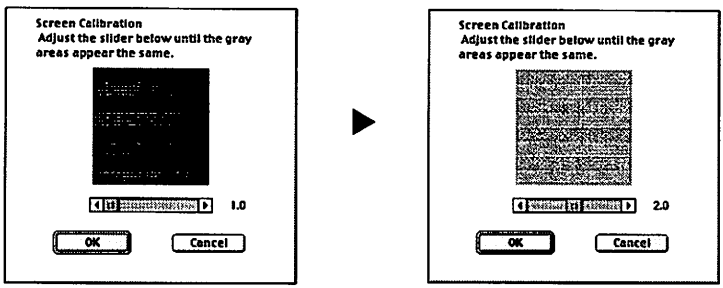

Screen Calibration
Please follow the instructions below to ensure the tone and contrast on your screen match the original image.
Using the slider, adjust the horizontal stripes until the two shades of gray match as closely as possible.
1.0
OK
Cancel
Screen Calibration
Please follow the instructions below to ensure the tone and contrast on your screen match the original image.
Using the slider, adjust the horizontal stripes until the two shades of gray match as closely as possible.
2.0
OK
Cancel

Note:
The gray stripes will not perfectly blend together; however, try to make the different tones match as closely as possible.

4. Click OK to finish calibrating your scanner and monitor.

For Macintosh users

1. Double-click the EPSON Screen Calibration icon in the EPSON Scanner folder to view the Screen Calibration dialog box.



2. Look at the screen from a distance and move the slider right or left until the two tones closely match.

Note:
The gray stripes will not perfectly blend together; however, try to make the different tones match as closely as possible.

3. Click OK to finish calibrating your scanner and monitor.

Viewing the Color Guide

You can view the Color Guide using an HTML browser on your computer. The Color Guide contains tips for handling color imaging data, using several color imaging products, and other general information about color imaging.

You will need one of the following browsers, or an equivalent, to view the Color Guide:

- Netscape Navigator 3.0 or later
- Microsoft Internet Explorer 3.0 or later

If a browser is not installed on your computer, you will need to obtain one and install it, or you can install the browser that comes with your Color Guide CD-ROM. For further details, double-click Readme.txt, and follow the instructions.

To view the Color Guide, double-click on color.htm, and follow the instructions on the screen.

Chapter 4

Using Your Scanner

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Placing a Document on the Scanner 4-2

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Scanning Procedure

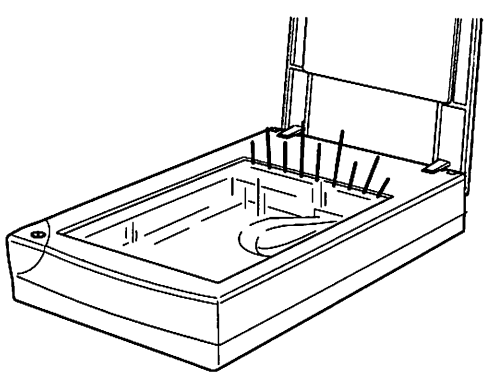
This chapter shows you how the scanner operates. The basic procedure for scanning is as follows:

1. Plug in the scanner.
2. Place the document you want to scan on the document table. (This is described in detail below.)
3. Run the scanner software and scan. (See page 4-7 for details on scanning.)

Placing a Document on the Scanner

Before scanning a document, remember to respect the rights of copyright owners. Do not scan published text or images without first checking the copyright status.

1. Plug in the scanner. The fluorescent lamp in the carriage turns on.



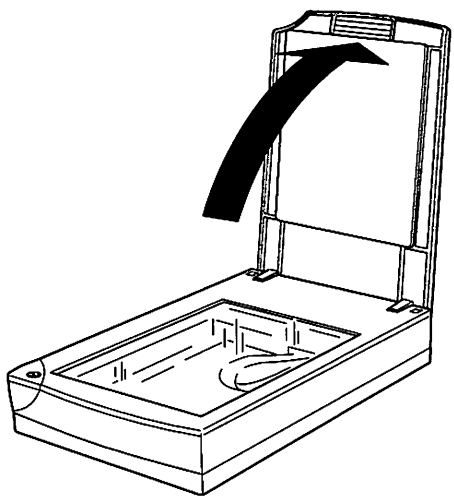
2. Turn on the computer and make sure that the scanner's fluorescent lamp is on, and not flashing.

   Note:

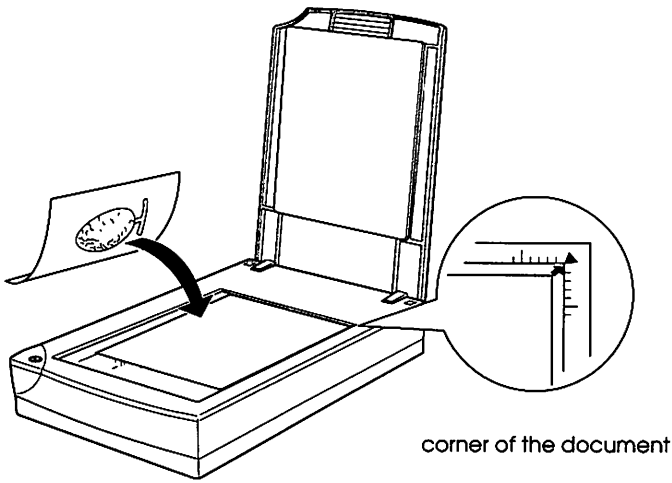
   - *If the fluorescent lamp is flashing, it means there is some kind of error. See Chapter 6 "Maintenance and Troubleshooting" if the fluorescent lamp is flashing.*

   - *The scanner will turn off the fluorescent lamp if it does not receive any commands from the computer within 10 minutes. This is normal and the lamp will turn back on when you scan. The lamp will also turn off if you unplug the USB cable. To turn the lamp back on, plug the USB cable in again.*

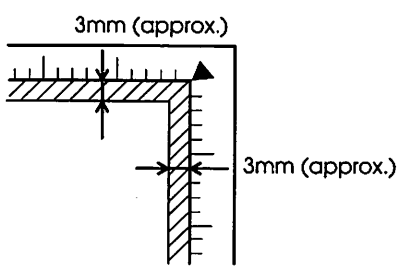
3. Open the document cover.



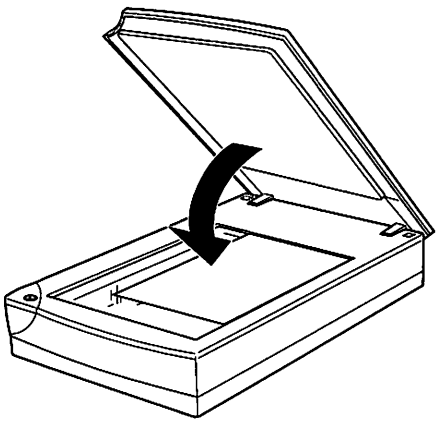
4. Place the document on the document table, with the side to be scanned facing down. Make sure that the document is carefully aligned.



Note:
An area approximately 3mm in from both the horizontal and vertical guides will not be scanned.



5. Close the document cover gently so that the document does not move.



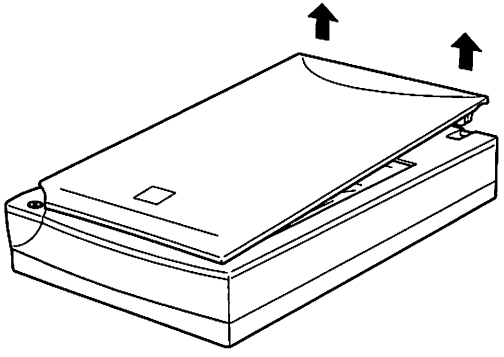
Note:

- *Make sure the document is flat against the glass surface, otherwise the image will appear fuzzy and out of focus. Also be sure to close the document cover to prevent interference from external light.*
- *Always keep the document table clean. See "Cleaning the Scanner" in Chapter 6.*
- *Do not leave photographs on the document table for an extended period of time as they may stick to the glass.*
- *Do not place heavy objects on top of the scanner.*

6. Start EPSON TWAIN and scan. For details see pages 4-7 to 4-8.

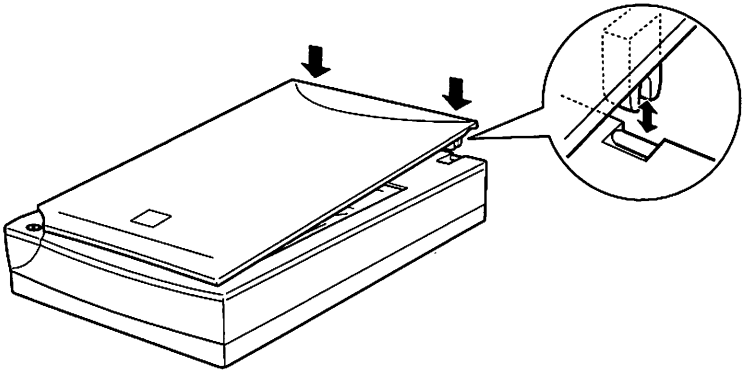
Removing the Cover for Thick or Large Documents

For thick materials or documents that are larger than the document table, remove the document cover.



Note:
When scanning with the cover removed, do not leave any area of the document table exposed to prevent interference from external light.

When you are finished scanning, reattach the document cover by pushing straight down on the back until it clicks into place.



Caution:
Make sure both of the cover's notches are directly above the clips on the scanner before pushing it down into place; otherwise damage may occur.

Starting EPSON TWAIN

There are two ways to scan; with an application that supports TWAIN, or with the ⟲ Start button and preassigned application software.

If you ..

- ❑ use an application that supports EPSON TWAIN to scan, open your application (see "Starting EPSON TWAIN through your application software" below).

- ❑ want to scan an image directly to your application without opening EPSON TWAIN or the TWAIN-compliant application every time, setup the ⟲ Start button and the application to work with (see Chapter 5 "Using the Start Button"). Then simply press the ⟲ Start button.

  Note:
  Even if your application supports TWAIN, some features of EPSON TWAIN may not be available depending on the application software.

Starting EPSON TWAIN through your application software

Application programs that support the scanning interface standard TWAIN, allow you to scan images while an application is running. To verify whether your application is compatible with TWAIN, see your application documentation.

How you should open EPSON TWAIN and scan varies depending on the application. Read the following to find out how to access EPSON TWAIN.

1. Start your application, for example, Presto! PageManager for EPSON.

2. Select Select Source from the File menu, and then select EPSON TWAIN L.

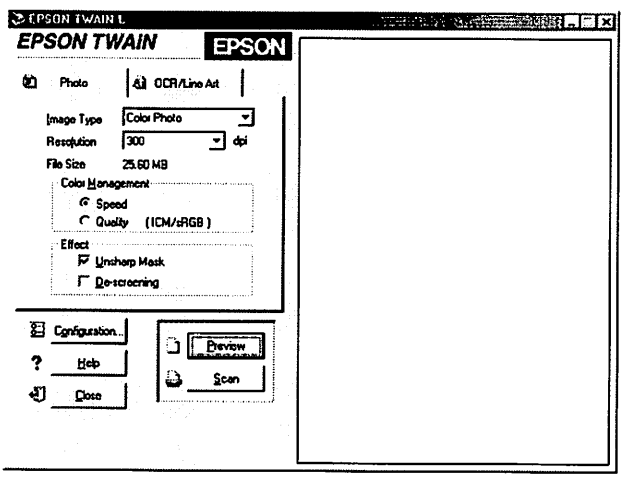
   Note:
   You usually need to perform this step only the first time you use the scanner with your application.

3. Choose Acquire from the File menu to open EPSON TWAIN.

To scan, see the next section.

Scanning an Image

EPSON TWAIN window



When you open EPSON TWAIN, the EPSON TWAIN window will appear. Click on either the Photo tab or OCR/Line Art tab, depending on which type of scanning you wish to do.

Note for Macintosh users:
Most illustrations shown in this chapter are for Windows, so they may vary from the actual dialog boxes that appear on your screen. You can use the dialog boxes following for both Macintosh and Windows reference however, as almost all the settings and functions are the same.

Note:

- *Online help also provides you with information on settings. Click Help to access Help.*
- *You cannot scan an image that exceeds available memory or disk space. If you attempt to scan an image that is too large, an alert appears on the screen.*
- *Before you begin scanning, you should calibrate your screen. For details, see Chapter 3, "Calibrating Your Screen."*
- *After an image is scanned, be sure to save it.*

Then click Preview. A preview image of the entire scanner document table will appear in the window on the right side of the EPSON TWAIN window.

Note:
You cannot preview an image that exceeds available memory or disk space.

You can now make settings in the Photo or OCR/Line Art menus. You can see the effects of the following settings in the preview image.

- Color Management
- Unsharp Mask
- Threshold

To make settings for color or black and white photos, see "Making EPSON TWAIN settings on the Photo menu" on page 4-10. To make settings for OCR or line art see "Making EPSON TWAIN settings on the OCR/Line Art menu" on page 4-16.

Making EPSON TWAIN settings on the Photo menu

This section describes all the settings you can make on the Photo menu.

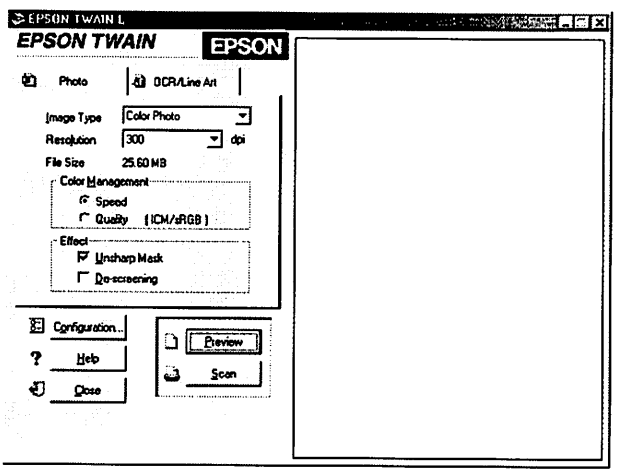


Image Type

Use the Image Type list to select the type of image to be scanned.

Color Photo:

24-bit Color scanning

Black & White Photo:

8-bit Gray scanning

Resolution

Use the Resolution list to select the resolution at which you wish to scan. You can choose from 75, 150, 300, 600, 1200 and 2400 dpi.

Recommended resolutions for scanning images are as follows:

Displaying on a monitor	75 dpi
Printing	150 or 300 dpi

A resolution value greater than 600 dpi is useful if you want to enlarge the image.

File Size

The File Size indicator only displays what the rough file size of the scanned image will be. Changes you make in your settings or the size of the marquee will be reflected here.

Color Management

Color Management provides two settings for controlling color matching.

Speed:

Speed uses auto optimization functions and provides the quickest scans.

Quality:

Quality is only available for Color Photo and uses ICM/sRGB (for Windows) or ColorSync (for Macintosh) color management to provide the best quality scans. If your monitor and printer support these color management systems, select this to obtain a quality scan.

Effect

Effect provides two options to manipulate the scanned image.

Unsharp Mask:

Unsharp Mask automatically sharpens the scanned image and displays the effect in the preview image.

De-screening:

De-screening automatically removes moiré patterns from images scanned from printed matter.

A moiré is a cross-hatch pattern that appears on scanned images when scanning printed material. It is a result of interference that occurs due to the difference between the pitches of the scanning and the halftone screens.

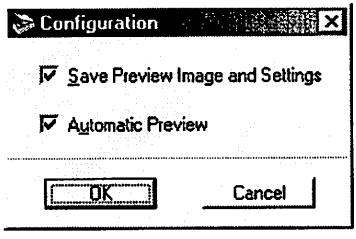
Note:
De-screening is performed by the software and may take more time to provide the final image.

If Resolution is set at 1200 or 2400 dpi, De-screening will not be available. EPSON recommends you select 150 dpi to achieve the best results.

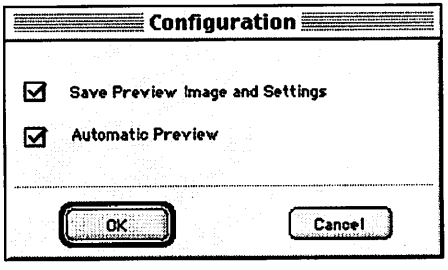
Configuration

Click the Configuration button on the Photo menu to view the following dialog box. You can make settings that affect the previewing.

Windows



Macintosh



Save Preview Image and Settings:

Select this check box to automatically save the preview image and all the image settings when you exit EPSON TWAIN (quit scanning). The next time you restart EPSON TWAIN, the last preview image and settings will reappear.

Automatic Preview:

Previewing automatically starts when you launch EPSON TWAIN (if this check box is selected).

Help

Clicking Help will start the EPSON TWAIN help system.

Close

Clicking Close will close the EPSON TWAIN software.

Note:
Be sure to save your scanned image before closing the application. See page 4-18 for details.

Preview

Clicking Preview will scan the entire document table and display a preview image with the settings you have made to the right of the Photo menu (Preview window).

Note:
Although the image in the Preview window changes as you make settings, the settings do not affect the actual image until you scan, or rescan, the image.

Scan

Once you have made all your settings, you must scan the image for all your settings to take effect. You can scan the entire document table or only a section of the preview image.

Scanning the entire document table:

To scan the entire document table, simply click Scan.

Scanning a portion of the preview image:

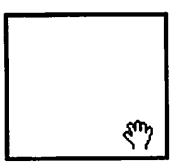
Perform the following steps to scan a portion of the preview image.

1. Click and drag your mouse in the Preview window and select the portion of the image you want to scan. A marquee will appear showing what portion will be scanned.

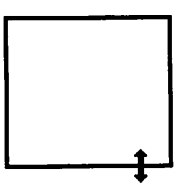
2. Click Scan.

Note:

- *When the mouse pointer is placed within the marquee (the frame of the selected image area), the mouse pointer changes to a hand icon. You can drag the marquee anywhere in the Preview window.*



- *When the mouse pointer is placed on the edge of the marquee, it changes to an arrow allowing you to resize the marquee.*

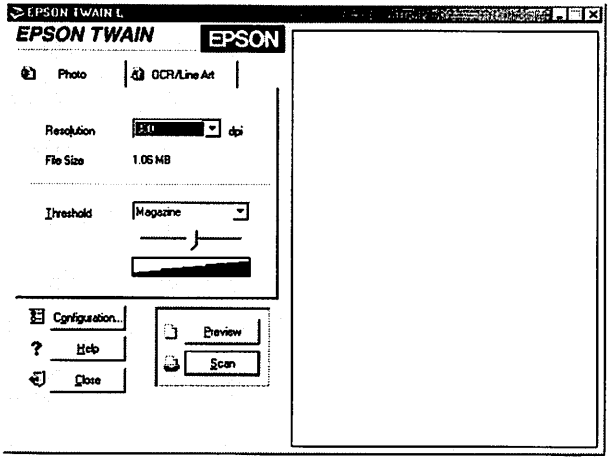


- *To remove or delete a marquee, double-click on the Preview window.*

Making EPSON TWAIN settings on the OCR/Line Art menu

This section describes all the settings you can make on the OCR/ Line Art menu.

Note:
For details on the Configuration, Help, Preview, Scan and Close buttons, see the previous section.



Resolution

Use the Resolution list to select the resolution at which you wish to scan. You can choose either 300 or 600 dpi.

Recommended resolutions for scanning text or black-and-white line art are as follows:

OCR	300 dpi
FAX	300 dpi
Printing	300 or 600 dpi

If you have a character recognition problem with OCR scanning, using 600 dpi may improve your OCR results. However, note that scanning at higher resolution takes longer.

File Size

The File Size indicator only displays what the rough file size of the scanned image will be. Changes you make in your settings or the marquee size will be reflected here.

Threshold

Threshold is used to control the lightness of the scanned image. You can adjust the Threshold value using the Threshold list or by using the slide bar.

Threshold list
The Threshold list provides the following four options which are suitable for scanning these materials with increasing levels of darkness:

- Newspaper
- Magazine
- Printout
- Book

Slide bar
The slide bar lets you adjust the lightness value seven steps from lighter to darker. If you use the slide bar, "User Defined" will appear in the Threshold list. Your threshold settings will remain in effect until you uncheck the "Save Preview Image and Settings" in the Configuration dialog box.

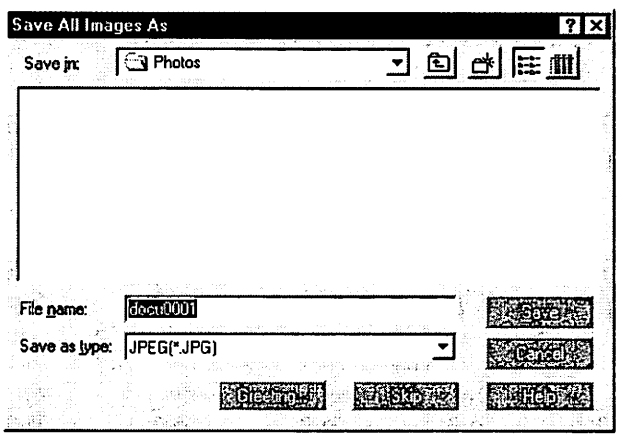
Saving the Scanned Image

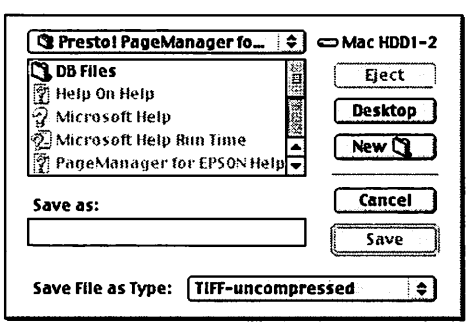
- To save a scanned image in your application, choose Save or Save As from the File menu. For details, see your application documentation.

- To save a scanned image in PageManager for EPSON, follow the steps below.

Note:
Parenthesized words in the following steps apply to Macintosh users.

1. Choose Save As from the File menu. One of the following dialog boxes appears on the screen.





2. Select the folder where the image will be saved.

3. Type a filename for your image in the File name (Save as) field.

4. Select the file format you want to save the image in from the Save as type (Save File as Type) field.

5. Click Save.

Scanning by Pressing the Start Button

You can open EPSON TWAIN, start scanning, and have the scanned image sent to a certain application, simply by pressing the ⟐ Start button on your scanner. To use this feature, you need to install PageManager for EPSON, or other Start button compatible software. The following occurs:

- Windows 98 detects when the ⟐ Start button is pressed and sends information to the Start button compatible application, such as PageManager for EPSON. Macintosh use EPSON Scanner Monitor, which performs the same function.

- The Start button compatible application will automatically open EPSON TWAIN, scan the image and process it in the way the application is designed.

Note:

- *You need to setup the Start button compatible software before using this feature. See Chapter 5 and the documentation that comes with the application.*

- *The scanned image will be handled by the software to its maximum capability. For example, using PageManager for EPSON, you can send the scanned image to a printer to print, or convert your scanned OCR image to text format and paste it in a wordprocessing application—all by simply pressing the ⟐ Start button.*

Chapter 5

Using the Start Button

The Start Button Feature 5-2

PageManager for EPSON 5-2
- Target applications in the Scan Buttons bar 5-2
- Assigning an application to the Start button 5-3
- Adding Applications to the Scan Buttons Bar 5-5
- Registering new applications 5-6

Setting Up EPSON Scanner Monitor for Macintosh 5-8

Setting Up the Start Button Feature for Windows 98 5-10

5

The Start Button Feature

The Start Button feature allows you to scan and send data to a target application with a single push of your scanner's ⇳ Start button. The following sections will help you set up your PageManager for EPSON, and EPSON Scanner Monitor software for Macintosh or Windows 98 system, so you can begin to use the Start Button feature.

Note for Windows 98 users:
The Start Button feature is supported by Windows 98 and EPSON Scanner Monitor software will not be installed onto Windows 98.
See page 5-10 for details on setting up the Start Button feature for Windows 98.

PageManager for EPSON

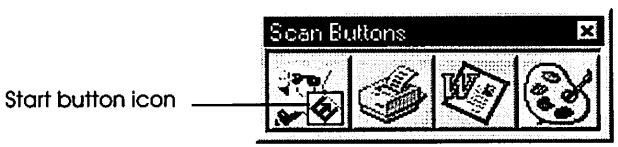
PageManager allows you to scan and send data directly to an assigned application with a single push of your scanner's ⇳ Start button. You can also scan to any target application by simply clicking on the application icon in PageManager's Scan Buttons bar. This section will help you set up PageManager so you can begin to scan using the ⇳ Start button. For more detailed information on PageManager settings, see your PageManager documentation.

Note:
For information on PageManager installation, see Chapter 3.

Target applications in the Scan Buttons bar

When PageManager is started, the Scan Buttons bar will appear on your screen. The icons in this bar represent target applications or peripheral devices that can be accessed by your scanner. This means that you can scan and send data directly to these applications or devices by clicking on their icons.

PageManager for EPSON also allows you to assign any one of the applications or devices on the Scan Buttons bar to the ⇳ Start button. This means that an image can be scanned and sent straight to your selected application with one simple push of the ⇳ Start button.



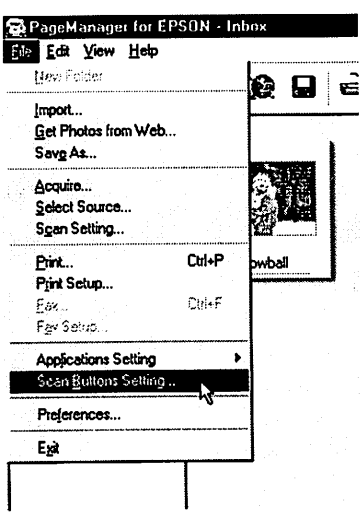
Note:
The application button showing the Start button icon represents the application that is assigned to the Start button.

5

Assigning an application to the Start button

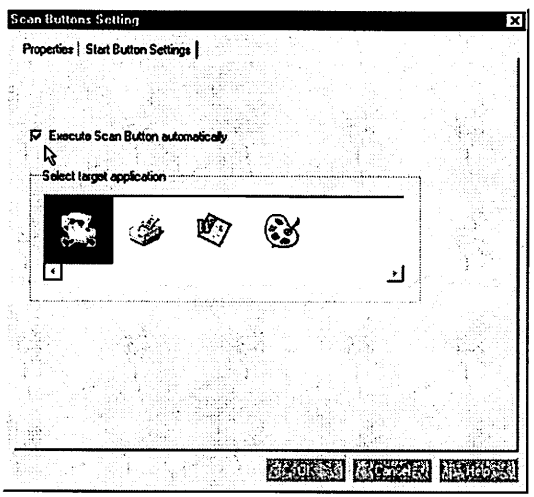
To assign an application on the Scan Buttons bar to the ⇳ Start button, follow the steps below.

1. Select Scan Buttons Setting from the File menu.



2. Click the Start Button Settings tab in the Scan Buttons Setting dialog box. The following dialog box appears.

   The icons in Select target application correspond to the icons in the Scan Buttons bar and represent the possible target devices and applications.


Scan Buttons Setting
Properties | Start Button Settings |
Execute Scan Button automatically
Select target application

3. Select an application from the Select target application box and click OK.

   The selected application is now assigned to the scanner's ◈ Start button.

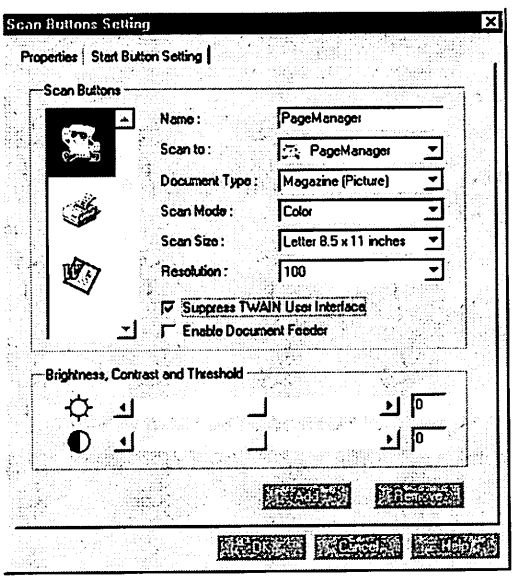
Execute Scan Button automatically check box

When this check box is selected, the assigned application will be automatically opened and the scanned image sent to the application when you press the ◈ Start button. When this check box is clear, no application is assigned to the ◈ Start button and only the Scan Buttons bar will appear when the ◈ Start button is pressed. Then you can select an application from the Scan Buttons bar.

Adding Applications to the Scan Buttons Bar

You can add applications appearing in the Application bar at the bottom of the PageManager window to the Scan Buttons bar. Follow the steps below.

1. Select Scan Buttons Setting from the File menu. You will see the following dialog box.



2. Specify the name of the setting in the Name box.

3. Click the arrow next to the Scan to box and select the application you want to add to the Scan Buttons bar.

4. Select the appropriate scanning settings (Document Type, Scan Mode, etc.) for the application from this dialog box and click Add. Then click OK.

   The button of the selected application appears on the Scan Buttons bar.

To remove an application assigned to the Scan Buttons bar, select the application in the box on the left of the dialog box and click Remove. Then click OK.

Suppress TWAIN User Interface check box

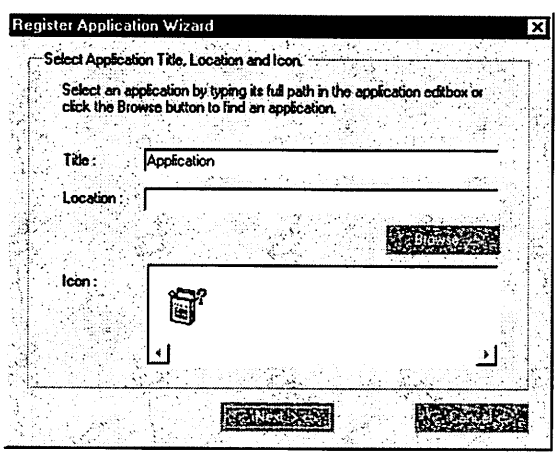
When this check box is selected, the EPSON TWAIN dialog box does not appear when you scan, and the scanner works according to the settings in PageManager. When this check box is clear, the EPSON TWAIN dialog box appears when you scan, and the scanner works according to the settings in EPSON TWAIN.

Registering new applications

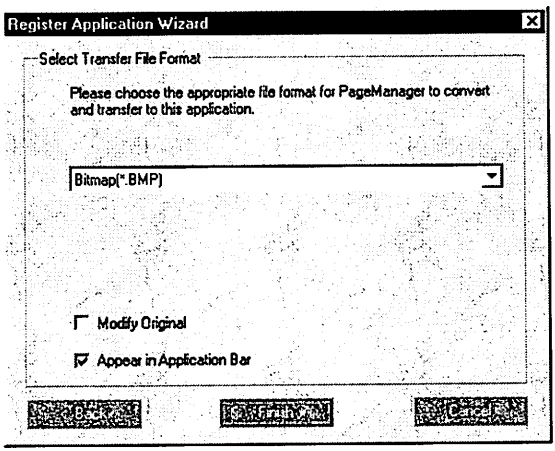
To add an application to Scan Buttons bar, you need to register the application. The registered applications will appear in the Scan to: box in the Scan Buttons Setting dialog box.

1. Select Application Setting from File menu and then select Register New Application.

   The Register Application Wizard dialog box appears.


Register Application Wizard
Select Application Title, Location and Icon
Select an application by typing its full path in the application editbox or click the Browse button to find an application.
Title :
Application
Location :
Browse...
Icon :

2. Specify the application's name, location and icon and click Next>.



3. Specify the format of the image and click Finish.

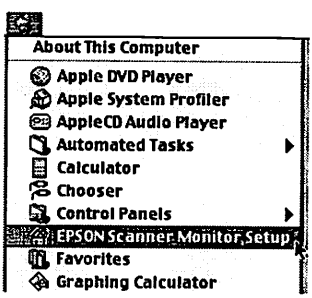
Setting Up EPSON Scanner Monitor for Macintosh

EPSON Scanner Monitor is software that recognizes when the ⟲ Start button is pressed and sends information to assigned application software supporting the Start Button feature and EPSON Scanner Monitor, such as PageManager for EPSON.

Once EPSON TWAIN is installed on Macintosh, EPSON Scanner Monitor is active and identifies PageManager for EPSON as the application that allows you to use the Start Button feature. If you need to turn off Scanner Monitor, or select another application that supports the Start Button feature, access Scanner Monitor as described below.

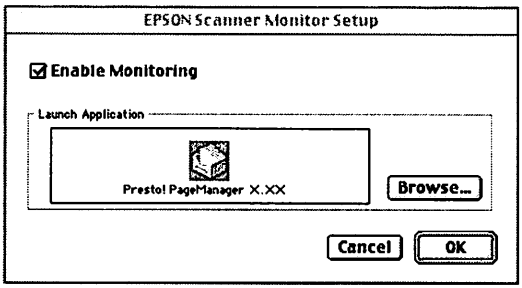
Note:
Application software other than PageManager for EPSON which supports both EPSON Scanner Monitor and the Start button feature may be limited.

Select Epson Scanner Monitor Setup from the Apple menu.



❑ Turning off Scanner Monitor

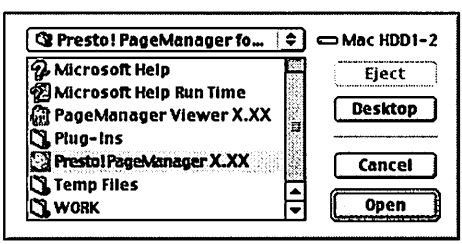
If you want to turn off Scanner Monitor, clear the Enable Monitoring check box. However, this will disable the scanner's Start Button feature.



To activate Scanner Monitor again, select the Enable Monitoring check box.

❑ Assigning an application to Scanner Monitor

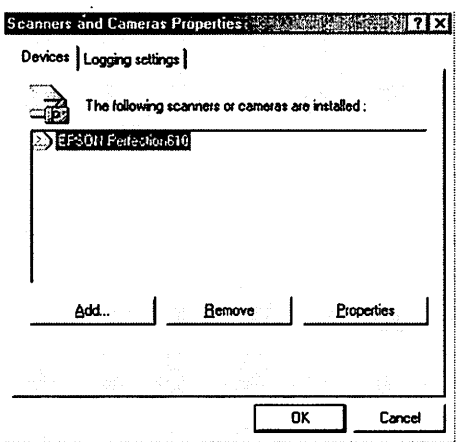
Click Browse. Select a folder and an application that supports the Start Button feature and EPSON Scanner Monitor, such as PageManager for EPSON.



Setting Up the Start Button Feature for Windows 98

Without having EPSON Scanner Monitor installed, Windows 98 allows you to use the ⟲ Start button on your scanner without having to open an application that supports the Start Button feature. When you press the ⟲ Start button, you can have a scanned image automatically sent to your application, such as PageManager for EPSON, as long as it is installed.

Once EPSON TWAIN is installed on Windows 98, the Scanners and Cameras icon appears on the control panel, and your scanner is listed in the Scanners and Cameras Properties dialog box as shown below.

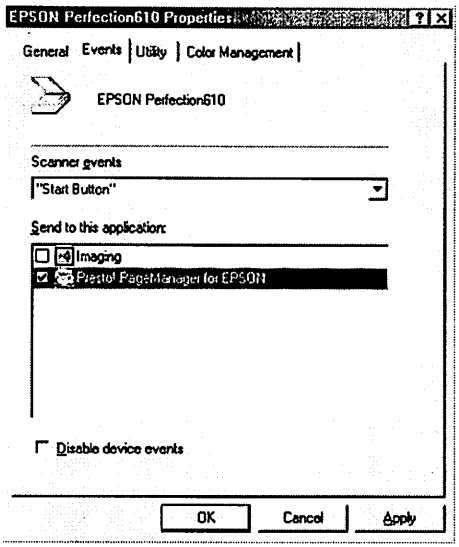


Assigning an application to the Start button

After you install applications that support "Scanner events", such as PageManager for EPSON, you need to select one of those applications for the scanner event.

If you want to use your scanner's ⟲ Start button with PageManager for EPSON as the supporting application, follow the steps on the next page.

1. Select your scanner from the installed scanners and cameras list in the Scanners and Cameras Properties dialog box. Click Properties, and then click the Events tab.



2. You can see the Start Button is listed as the scanner event. Make sure the check box of the application you want to assign to the ⟐ Start button is selected and all other application check boxes are clear in the Send to this application list.

   Note:

   - *If more than one application is selected, a dialog box appears prompting you to select an application when the Start button is pressed.*

   - *Some applications do not support linkage to scanners and digital cameras. Linkage is available only with the applications that appear in the Send to this application list.*

3. Close the dialog box by clicking OK.

Disabling the Start button

If you need to disable the Start Button feature, select the Disable device event check box in the EPSON Perfection 610 Properties dialog box. When this check box is clear, Windows 98 will detect if the ⇳ Start button is pressed and launch the application you selected in the Send to this application list.

Chapter 6

Maintenance and Troubleshooting

Maintenance 6-2
Cleaning the scanner 6-2
Replacing the fluorescent lamp 6-3

Transporting the Scanner 6-3

Problems and Solutions 6-4
Error indicator 6-5
Operating problems 6-5
Quality problems 6-8
Software setup problems 6-14
Software operation problems 6-14
Scanning problems 6-16

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RAM and hard disk size 6-18
Accelerator boards 6-19
Video cards 6-19
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Maintenance

Cleaning the scanner

To keep your scanner operating at its best, you should clean it periodically, as described below.

1. Unplug the power cord.
2. Clean the outer case with mild detergent and water.
3. If the glass of the document table gets dirty, clean it with a soft dry cloth. If the glass is stained with grease or some other hard-to-remove material, use a small amount of glass cleaner and a soft cloth to remove it. Wipe off all remaining liquid.

Be sure that there is no dust on the glass of the document table. Dust can cause white spots in your scanned image.

Caution:

- *Be careful not to scratch or damage the glass of the document table, and do not use a hard or abrasive brush to clean it. A damaged glass surface can decrease the scanning quality.*
- *Never use alcohol, thinner, or corrosive solvent to clean the scanner. These chemicals can damage the scanner components as well as the case.*
- *Be careful not to spill liquid into the scanner mechanism or electronic components. This could permanently damage the mechanism and circuitry.*
- *Do not spray lubricants inside the scanner.*
- *Never open the scanner case.*

Replacing the fluorescent lamp

The luminosity of the fluorescent lamp declines over time. If the lamp breaks or becomes too dim to operate normally, the scanner stops working and the fluorescent lamp will not come on. When this happens, the lamp assembly must be replaced. For details, contact your dealer.

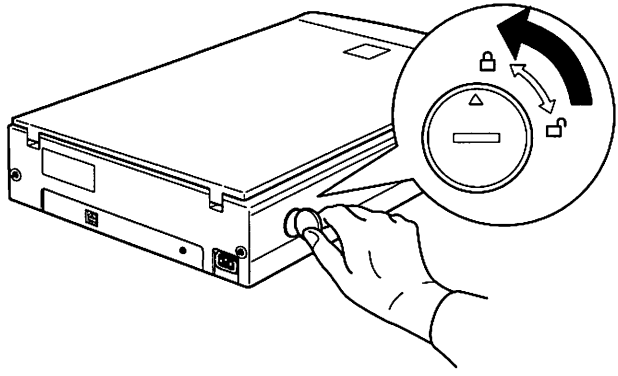
Caution:
Never open the case of the scanner. If you think repairs or adjustments are necessary, consult your dealer.

Transporting the Scanner

If you are transporting the scanner a significant distance or storing it for an extended period, follow the steps below to secure the carriage.

1. Plug in the scanner and wait until the carriage moves to the home position (position nearest the cover hinges). When the carriage lamp remains on, unplug the scanner.

2. Turn the transportation lock to the locked position to secure the carriage.



Problems and Solutions

This section divides scanner problems into six categories:

Error indicator ..... page 6-5
Operating problems ..... page 6-5
Quality problems..... page 6-8
Software setup problems ..... page 6-14
Software operation problems ..... page 6-14
Scanning problems ..... page 6-16

See the table in "Error indicator" first. If this does not help you solve your problem, go to the category for the type of problem you have, then look for the problem description.

The online Color Guide also provides versatile tips and other information helpful for problem-solving.

Error indicator

If an error occurs, the scanner stops operating and the carriage lamp shows the type of error.

Pattern of light	Problem and solution	
Ö (Rapidly flashing)	Cause 1:	The interface setup is wrong, or the scanner is not properly connected to the computer.
	What to do 1:	Check the interface connection. Then turn the scanner off and back on to initialize the scanner again.
	Cause 2:	The transportation lock is not released or the scanner is broken.
	What to do 2:	Make sure that the transportation lock is in the unlocked position; then turn the scanner off and then back on. If the scanner still does not operate properly, or if this error occurs repeatedly, consult your dealer.
●	Cause:	The lamp is worn out.
	What to do:	Consult your dealer.

O = on, ● = off, Ö = flashing

Note:
The scanner will turn off the fluorescent lamp if it does not receive any commands from the computer within 10 minutes.

Operating problems

Problems you may have while using the scanner often involve the operation of your software and computer. Operation problems usually occur because of:

- ❑ Incorrect setup of the interface (see Chapter 3).

- ❑ Incorrect setup of your computer or software (see Chapter 3 in this guide or the software documentation).
- ❑ Incorrect operation of your software (see Chapters 4 and 5).

Also see the documentation that came with your computer and printer for possible solutions.

The fluorescent lamp does not come on.

Cause	What to do
The scanner is not connected correctly.	Make sure the power cord is connected to the scanner and plugged into a power outlet.
Normal power saving function	If the scanner does not receive any commands after 10 minutes, it turns off the lamp. The lamp will turn back on when you scan.

The scanner does not scan.

Cause	What to do
The scanner is not ready to scan.	Wait until the fluorescent lamp stays on (ready for scanning).
More than one USB hub is in use, or the cable is unsuitable.	Try connecting the scanner directly to the computer's USB port, or use an EPSON USB cable .

The scanner software does not work properly.

Cause	What to do
Software is not installed properly.	Make sure your software is installed correctly. **For Windows 98 users:** Check if your scanner is listed more than once in the Scanners and Cameras Properties dialog box. To view the dialog box, double-click the Scanners and Cameras icon in Control Panel. Remove your scanner every place it appears in the dialog box, then reinstall EPSON TWAIN following the instructions in the Chapter 3. *Note:* *When reinstalling the scanner software, if a dialog box does not appear and a message box and followed by a dialog box requesting the EPSON Scanners Driver Disk appears instead, insert the Scanner Software CD in the CD-ROM drive. Make sure to specify the correct drive letter, the EPSON folder, the folder of your preferred language, and the Win98 folder as the location.*
Computer system doesn't meet the requirements.	Make sure your computer meets the memory and other system requirements specified for the software you are using.
Not enough memory is available.	Make sure the computer has enough memory for your software. If the computer does not have enough memory available, see your software and computer documentation for details.

Quality problems

The entire image is distorted or blurred.

Cause	What to do
Document is not placed correctly.	Make sure the document is flat against the document table.
Document was moved.	Make sure you do not accidentally move the document during scanning.
Scanner orientation is unsuitable.	Make sure the scanner is on a flat, stable surface.

Part of the image is distorted or blurred.

Cause	What to do
The document condition is poor or the document was placed incorrectly.	Make sure the document is uniformly flat against the document table. A document that is wrinkled or warped may not scan well. **Caution:** *Do not place heavy objects on the document table.*

Edges of the document are not scanned.

Cause	What to do
The document size exceeds the readable scanning area.	Position the document so the area you want to scan is at least 3mm from the edge guide limits of the document table.

Colors are patchy or distorted at the edges of the image.

Cause	What to do
The document is too thick or warped, or there is too much outside light.	A document that is very thick or warped at the edges can cause discoloration. Cover the edges of the document with paper to block outside light.
The document is not placed correctly.	Make sure the document is flat against the document table.

The image is faint or out of focus.

Cause	What to do
The document is not placed correctly.	Make sure the document is flat against the document table.

The image is too dark.

Cause	What to do
Threshold is unsuitable.	Check your software's threshold. Check the brightness and contrast settings of your computer display. See Chapter 4.

Straight lines in the image come out jagged.

Cause	What to do
Document is not placed correctly.	Make sure the document orientation is perfectly straight on the document table. Align vertical and horizontal lines with the scales at the top and side of the document table.

The image does not look the same as the original.

Cause	What to do
Image settings are incorrect.	Try different image setting combinations on your scanner software.
Color matching software is not sufficient, or not installed properly.	Your software may not have sufficient color matching and color management features, or these components may not be installed correctly. See the documentation that comes with your software and computer.
File format or image settings are unsuitable.	If you are importing an image file, make sure the file format is one your software can read. Also, make sure the image settings of your software are appropriate for the type of image you want to scan.

A line of dots is always missing from the scanned image.

Cause	What to do
The print head has malfunctioned.	Print head malfunction is indicated when a line is missing on printouts only. See your printer manual.
The scanner sensor has malfunctioned.	Scanner sensor malfunction is indicated when a line is missing on both screen images and printouts. Contact your dealer.

A line of dots always appears in the scanned image.

Document table is dusty or scratched.	If this happens on both your screen and printout, the document table may be dusty or scratched. Clean the document table. If the problem still exists the table may be scratched and require replacement.

When scanning printed matter, textured patterns of dots appear inside particular areas of the image.

Cause	What to do
Normal scanning.	This condition is normal. The scanner automatically mimimizes the problem if De-screening is checked on the Photo menu on the EPSON TWAIN window.

Colors on your monitor are different from those in the original image.

Cause	What to do
Software image settings need adjustment.	Check the image settings of your scanner software. Try different combinations of these settings.
Color matching and color management capabilities of your system are insufficient.	Check the color matching and color management capabilities of your computer, display adapter, and software. Some computers can change the color palette to adjust the colors on your screen. See your software and hardware manuals for details.
Normal scanning.	Exact color matching is very difficult. Check your software and monitor documentation for information on color matching and calibration. Also see your *Color Guide.*

Printed colors are different from those in the original image.

Cause	What to do
Normal scanning.	Exact color matching is very difficult. Check your software or contact your printer company for information on color matching and calibration.

The printed image is larger or smaller than the original.

Cause	What to do
Printed size was judged using the monitor image.	The image settings of your software determine the size of the printed image. Do not use the size of the monitor image to judge the printed size.

Scanned images cannot be printed or come out garbled when printed.

Cause	What to do
Printer is not connected or set up properly, or maintenance is necessary.	Make sure your printer is properly connected to the computer, correctly set up, and maintained. See your printer manual for details.
Software is not installed properly.	Check that your software is properly installed and set up for your printer. See your software manual.

Software setup problems

You cannot install EPSON TWAIN.

Cause	What to do
System configuration does not meet the requirements.	Check if your computer and operating system meets the system requirements on page 3-2. Make sure your computer has enough memory to run the application.

Software operation problems

You cannot start EPSON TWAIN.

Cause	What to do
Scanner is switched off.	Plug in the scanner and then turn on the computer.
Interface cable is unsuitable.	Make sure the interface cable meets the requirements of your interface board. See the manual that comes with the interface board.
Connection is not made properly.	Unplug the scanner and turn off computer and check the connection between the scanner and the computer.
Incorrect selection of TWAIN Data Source in application.	Make sure that EPSON TWAIN L is selected properly in your application software. See "Starting EPSON TWAIN through your application software" on page 4-7.

Software is not installed properly and EPSON TWAIN L does not appear in the TWAIN Data Source list.	Make sure your software is installed correctly. **For Windows 98 users:** Check if your scanner name appears under Imaging Device hardware type without a ? or ! mark in the Device Manager menu. To view this menu, right-click the My Computer icon on the Desktop. If your scanner appears with a ? or ! mark, or appears as an Unknown devices hardware type, click Remove while your scanner is connected and turned on to remove it from the Device Manager menu. Then reinstall EPSON TWAIN following the instructions in the Chapter 3. *Note:* *If the EPSON Scanners Driver Disk is requested when reinstalling the scanner software, insert the Scanner Software CD in the CD-ROM drive and make sure to specify the correct drive letter, the EPSON folder, the folder of your preferred language, and the Win98 folder as the location.*

Scanning problems

Image is dark, with little or no detail.

Cause	What to do
Screen is not calibrated.	Calibrate the screen as described in "Calibrating Your Screen" on page 3-10.

You cannot scan an image or you only get a few dots for the scanned image.

Cause	What to do
No document on the document table.	Make sure you have placed a document on the document table of the scanner.
Threshold setting needs changing.	When the OCR/Line Art tab is selected in the EPSON TWAIN window, change the Threshold setting on the OCR/Line Art menu. See "Threshold" on page 4-17.

Moiré (cross hatch) patterns appear in the scanned image during scanning of printed material

Cause	What to do
Effect setting is unsuitable.	Select the De-screening setting on the Photo menu.
Transparent sheet was not used.	Place a transparent sheet between the document and document table to defocus the image.

Document is not positioned correctly.	Move or angle the document slightly.
Unsharp Mask setting is selected.	De-select Unsharp Mask for a softer focus setting.

Colors differs from the original or look strange.

Cause	What to do
Screen is not calibrated.	Calibrate the screen. See Chapter 3.
Image Type and Color Management settings are incorrect.	Make sure the Image Type (page 4-10) and Color Management settings (page 4-11) are correct.
Normal scanning.	Printed colors will not exactly match the colors on your monitor, since printers and monitors use different color systems: monitors use RGB (red, green, and blue), while printers typically use CMYK (cyan, magenta, yellow, and black).

Poor character recognition during OCR scanning.

Cause	What to do
Resolution setting is unsuitable.	Select a different Resolution setting on the OCR/Line Art menu.
Threshold setting is unsuitable.	Try adjusting the Threshold setting on the OCR/Line Art menu.

Scanning does not start by pressing the Start button.

Cause	What to do
Scanner Monitor software is not installed properly. (For Macintosh)	Make sure the Scanner Monitor software is running and check the Scanner Monitor's Launch Application path is set correctly.
Scanner Event is not selected properly. (For Windows 98)	Click the Events tab in your scanner's Properties dialog box and make sure the Disable device events check box is clear. And make sure the Start button is selected as the Scanner events, and at least one scanner event recognizable application in the Send to this application box is selected.

Sizing Up Your System

Your scanner is sufficient for most scanning needs, but if you are not satisfied with the quality of the images on your monitor or with the speed of image processing, read this section. While it does not contain specific recommendations, it describes various possibilities for improving your scanning system. For further information, seek advice from your dealer or an experienced scanner user.

RAM and hard disk size

Scanned images use much more memory than text files, so you may need more RAM (Random Access Memory) in your computer and a larger hard disk than you have used previously.

Accelerator boards

In addition to memory, processing speed is important because large files take longer to process than small ones. Therefore, you may want to add an accelerator board to your computer.

Video cards

A video card that is sufficient for text may not be good enough for displaying graphic images, especially in color. If all your scanned images look coarse on your monitor, you may want to upgrade your video card. You will need 24-bit color, also called true color or millions of colors, to make the highest quality image reproductions.

Monitors

The resolution of your monitor affects the quality of the image you see. Consider a high resolution monitor if you do precise color work, but also be sure you have a high quality video card.

File compression software

Many different programs are available to make image files smaller for storage or transmission. For example, some compression software can store a 3MB image file on a 1.44MB floppy disk, and compress images and restore them with no loss of data or quality; others compress images more, but the restored file is not exactly the same as the original. The difference between the original and restored files is, however, almost unnoticeable.

Appendix A

Technical Specifications

Scanning A-2

Electrical A-3

Environmental A-4

Safety Approvals A-5

CE marking A-5

USB Interface A-6

Initialization Methods A-7

A

Scanning

Scanner type:	Flatbed, color
Photoelectric device:	Color CCD line sensor
Effective pixels:	5100 × 7020 pixels at 600 dpi, 100%
Document size:	216 mm × 297 mm (8.5 inches × 11.7 inches A4 or US letter size. The reading area can be specified from your software.)
Scanning resolution:	600 dpi (main scan) 2400 dpi with Micro Step (sub scan)
Output resolution:	75, 150, 300, 600, 1200 and 2400 dpi
Color separation:	RGB color filters on CCD
Reading sequence:	
Monochrome	One-pass scanning
Color byte sequence	One-pass scanning (R, G, B)
Color line sequence	One-pass scanning (R, G, B)
Image data:	12 bits per pixel per color internal 8 bits per pixel per color external
Line Art settings:	Fixed threshold
Gamma correction:	1 type for user-defined
Interface:	USB (Type B Receptacle Connector)
Light source:	White cold cathode fluorescent lamp
Reliability:	10,000 cycles of carriage movements (main unit MCBF)

Dimensions:	Width: 287 mm (11.3 inches) Depth: 425 mm (16.7 inches) Height: 88 mm (3.4 inches)
Weight:	Approx. 4.5 kg (9.9 lb)

Electrical

	100–120 V model	220–240 V model
Input voltage range	AC 90 to 132 V	AC 198 to 264 V
Rated frequency	50 to 60 Hz	
Rated current	0.5 A	0.3 A
Power consumption	Approx. 20W	

Note:
Check the label on the back of the scanner for voltage information.

Environmental

Temperature:	
Operation	5° C to 35° C (41° F to 95° F)
Storage	–25° C to 60° C (–13° F to 140° F)
Humidity:	
Operation	10% to 80%, without condensation
Storage	10% to 85%, without condensation
Operating conditions:	Ordinary office or home conditions. Extreme dust should be avoided. Operation under direct sunlight or near a strong light source should be avoided.

Note:
Specifications are subject to change without notice.

Safety Approvals

120V model:	
Safety standards	UL 1950 with D3 CSA C22.2 No. 950
EMC	FCC part 15 Subpart B Class B CSA C108.8 Class B
230V model:	
Safety standards	EN 60950
EMC	EN 55022 (CISPR Pub 22) Class B AS/NZS 3548 Class B

CE marking

230 V model:	
Low Voltage Directive 73/23/EEC	EN 60950
EMC Directive 89/336/EEC	EN 55022 Class B EN 61000-3-2 EN 61000-3-3 EN 50082-1 IEC 801-2 IEC 801-3 IEC 801-4

USB Interface

Interface type: Universal Serial Bus Specification Revision 1.0

Configuration:

Element	Description
Device	Full Speed mode (12Mbit/s) Class : Vendor-specific Vendor ID : 0x04B8 (Seiko Epson Corp.) Product ID : 0x0103
Configuration	Characteristics : Self-powered Remote wake up feature: Not supported Maximum power consumption from VBUS : 2mA (5V)
Interface	No alternate setting Number of endpoints used by this interface (excluding endpoint 0) : 2 Class : Vendor specific
Endpoint 1	Bulk IN transfer Maximum data transfer size : 64 byte
Endpoint 2	Bulk OUT transfer Maximum data transfer size: 64 byte
String Descriptor	Language ID : US English 1 : iManufacturer: "EPSON" 2 : iProduct: "Perfection610"

Electrical standard: Full Speed mode(12Mbit/s) of Universal Serial Bus Serial Bus Specification Revision 1.0.

Connector type: One receptacle (Type B)

Initialization Methods

The scanner can be initialized (returned to a fixed set of conditions) in the following ways:

Hardware initialization	* The scanner is plugged in. * The USB cable is unplugged from the USB port on the scanner.
Software initialization	* Software sends the ESC @ (initialize the scanner) command. * The scanner receives a Bus Reset from the USB interface.

Appendix B

Contacting Customer Support

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B

If your scanner is not operating properly and you cannot solve your problem using the troubleshooting information in this guide or online help, contact customer support services for assistance.

We will be able to help you more quickly if you are able to give the exact information indicated below.

Serial number of your scanner:
(The serial number label is on the back of the scanner.)

Brand and model of your computer:

Scanner software version:
(Click the About button on the Help menu in your application for the version number.)

Version of Windows (95, 3.1, NT 4.0, and so on):

Software application(s) you normally use with your scanner and their version number(s):

For United Kingdom and the Republic of Ireland Users

If you purchased your product in the UK or the Republic of Ireland, EPSON (UK) LTD provides a range of customer services and technical support.

Support Via the World Wide Web

- For information on the latest EPSON products, software drivers, on-line user guides and answers to frequently asked questions:

  http://www.epson.co.uk

- To email EPSON Technical Support:

  http://www.epson.co.uk/support/email/

- For a full list of EPSON Customer and Warranty Support services:

  http://www.epson.co.uk/support/

Support Via Telephone

Our Customer and Warranty Support teams can be contacted by calling 0870 163 7766 in the UK or 0044 0870 163 7766 from the Republic of Ireland. They can provide the following services:

- Technical information on installing, configuring and operating your EPSON products
- Arranging for faulty EPSON products to be repaired within the warranty period

Before you call, please have the following information ready:

Product Model:

Serial number of your product:
(The serial number label is on the back of the product)

Brand and model of your computer:

Driver software version:
(Click the About button in your driver)

Operating System (for example, Windows 3.1/ 95/98, NT 3.5/ 4.0, Mac OS):

Software applications(s) you normally use with your product and their version numbers(s):

Pre Sales Enquiry Desk

Our Enquiry Desk team can be contacted by calling 0800 220546 in the UK or 1 800 409132 from the Republic of Ireland, by faxing 01442 227271 in the UK or 0044 1442 227271 from the Republic of Ireland, and via Email at info@epson.co.uk. They can provide the following information:

- Pre sales information and literature on new EPSON products (also available via our world wide web site at http://www.epson.co.uk)
- Where to purchase genuine EPSON consumables, accessories, and options

For Australian Users

EPSON Australia wishes to provide you with a high level of Customer Service. As well as this *User's Guide*, we provide the following sources for obtaining information:

EPSON FAXBACK

EPSON FAXBACK will fax you the latest specifications and pricing for most EPSON products offered in Australia. There is also technical information including details of the latest software and drivers available. Phone (02) 9903 9075 and the system will guide you through a number of choices before faxing the information to your fax machine.

EPSON Bulletin Board System

This is where you can download the latest software and drivers. Visit the BBS to check out the latest versions. If you have a modem, phone (02) 9417 5090.

Internet URL http://www.epson.com.au

Access the EPSON Australia World Wide Web pages. Worth taking your modem here for the occasional surf! You can get the same information as offered on the EPSON FAXBACK and the EPSON Bulletin Board plus more.

Your dealer

Don't forget that your dealer can often help identify and resolve problems. The dealer should always be the first call for advice on problems. They can often solve problems quickly and easily as well as give you advice on the next step to take.

EPSON Helpdesk

EPSON Helpdesk is provided as a final backup to make sure our clients have access to advice. Operators on the Helpdesk can aid you in diagnosing hardware and software problems. They can also advise you on the latest EPSON products and where the nearest dealer or service agent is located. Many types of queries are answered here.

The Helpdesk numbers are:

Phone:	(02) 9903 9040
Fax:	(02) 9903 9189

We encourage you to have all the relevant information on hand when you ring. The more information you prepare, the faster we can help solve the problem. This information includes the *User's Guide* for your EPSON product, type of computer, operating system, application programs, and any other information you feel is required.

For Singapore Users

Contact the telephone and fax numbers below:

Phone:	(065) 337-7911
Fax:	(065) 334-1185

For Hong Kong Users

To obtain technical support as well as other after-sales services, users are welcome to contact EPSON Hong Kong Limited.

Internet home page

EPSON Hong Kong has established a local home page in both Chinese and English on the Internet to provide users with the following information:

- Product information
- Answers to Frequently Asked Questions (FAQs)
- Latest versions of EPSON printer drivers

Users can access our World Wide Web home page at:
http://www.epson.com.hk

Electronic bulletin board system

An electronic bulletin board system (BBS) is also available to obtain printer information and the latest versions of printer drivers. You can log on to the following number for the BBS service:

BBS:	(852) 2827-4244

Technical Support Hotline

You can also contact our technical staff at the following telephone and fax numbers:

Phone:	(852) 2585-4399
Fax:	(852) 2827-4383

For Philippines Users

To obtain technical support as well as other after sales services, users are welcome to contact the EPSON Philippines Representative Office at the telephone and fax numbers below:

Phone:	(632) 813-6552
Fax:	(632) 813-6545
BBS:	(632) 814-0595

Glossary

additive primary colors
The colors of red, green and blue (RGB) - which give the perception of white when fully added. These are the colors of the color system used with monitors and scanners.

bi-level data
Image data that is composed of 1 bit per pixel. A pixel is represented by a single bit of digital data that can express only 1 (light) or 0 (dark).

bit
Short for binary digit. The smallest unit of data in computer processing. A bit can represent two values: on and off, or 1 and 0.

bit/pixel
The unit that indicates the number of bits allocated for a pixel. The larger the bit value, the more detail of a pixel will be reproduced.

brightness
A scanner function to lighten or darken the output image data.

byte
A unit of information consisting of eight bits. A byte can represent a control code or character.

carriage
A component of the scanner that contains the optical sensor and light source for scanning.

color correction
A method of adjusting the color image data for a particular type of device so that the reproduction results are as close as possible to the original colors.

color separation
A process of converting full-color images into a limited number of primary colors. Additive primary colors (red, green, and blue) are used by the scanner, and the subtractive primary colors (cyan, magenta, and yellow) plus black are used for printing press separation.

default
A set of values used when no other selections have been made. These are sometimes called factory defaults if the original values have not been changed since the scanner has left the factory.

dithering
A process in which software or an output device simulates continuous tones with groups of dots.

document
The item, such as a sheet of paper or a book, that is placed on the document table for the scanner to read.

dpi
Short for dots per inch. A unit of measurement for resolution. The higher the value, the higher the resolution.

dropout color
A color the scanner does not recognize and ignores. You can select and deselect dropout colors in the scanner software.

ESC/I
Abbreviation for EPSON Standard Code for Image scanners. A system of commands that allows you to control image scanners from your software.

ESC/P
Abbreviation for EPSON Standard Code for Printers. A system of commands that allows you to control printers from your software.

grayscale
Images represented with various shades of gray in addition to black and white.

halftoning
A method of reproducing images with patterns of dots to improve the quality of the output.

home position
The position at the rear (nearest the cover hinge position) of the scanner where the carriage rests before a scanning operation.

imagesetter
A device that uses computer files to produce high-resolution text and graphics output on film or paper. These are usually found in service bureaus and printing companies.

impact dot printer
A printer that transfers ink onto the paper by striking an ink ribbon with a number of small pins.

ink jet printer
A printer that transfers ink onto the paper by spraying the ink through a number of small nozzles.

interface
A piece of hardware, a method, or a standard used for connection between or among computer devices.

line sequence
A type of color scanning that separates primary colors line by line. The carriage makes only one pass.

monochrome
Black and white images, or images represented only by the intensity of luminosity.

OCR
Optical Character Recognition. The technology that allows computers to "read" text from physical objects. OCR requires a graphical representation of text to interpret, which usually comes from a scanned image.

page sequence
The type of color scanning in which the entire image is scanned once for each separate color.

pixel
Short for picture element. Each image is composed of a number of pixels. Pixels are also counted in units of dots.

plain bi-level
Bi-level image data without the halftoning process.

port
An interface channel through which data is transmitted between devices.

primary colors
Basic colors. See *additive primary colors* and *subtractive primary colors.*

resolution
Indication of how finely an image is resolved into pixels. Measured in dots per inch (dpi), pixels per inch (ppi), or samples per inch (spi).

scan
An operation performed by the sensor and the carriage. The image is divided into pixels by scanning.

scanning area
The physical size of the image that can be scanned by the scanner.

subtractive primary colors
The colors of cyan, magenta, and yellow (CMY) - which produce black when mixed in certain amounts. In printing, black is often added to give more definition as mixing of actual inks cannot produce pure black.

threshold
A reference point that is used to determine whether data will be processed as "on" or "off". In the case of color image data, "on" means that a certain color will appear in a pixel or dot, and "off" means that color will not appear there.

tone correction
A method of adjusting the tone curve so that the reproduction results on different types of output devices have gradations similar to the original image.

tone curve
The graph that shows the contrast ratio between the input (original image) and output (image data) in image processing.

USB
A Universal Serial Bus. A hardware interface for connecting low-speed peripherals such as a keyboard, mouse, scanner, or printer to the computer.

USB hub
A device that normally provides four TYPE A sockets to increase the number of USB ports on a PC.

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EPSON OVERSEAS MARKETING LOCATIONS

EPSON AMERICA, INC.
20770 Madrona Ave.
P.O. Box 2842
Torrance, CA 90509-2842
Phone: (800) 922-8911
Fax: (310) 782-5220

EPSON UK LTD.
Campus 100, Maylands Avenue,
Hemel Hempstead, Herts,
HP2 7TJ, U.K.
Phone: (+44) 01442 261144
Fax: (+44) 01442 227227

EPSON DEUTSCHLAND GmbH
Zülpicher Straße 6,
40549 Düsseldorf Germany
Phone: (0211) 56030
Fax: (0211) 5047787

EPSON FRANCE S.A.
68 bis, rue Marjolin
92300, Levallois-Perret, France
Phone: 33.1.40.87.37.37
Telex: 610657

EPSON AUSTRALIA PTY. LTD.
70 GIBBES STREET, CHATSWOOD 2067 NSW.
Phone: 2-9903-9000
Fax: 2-9903-9177

EPSON SINGAPORE PTE. LTD.
No. 1 Temasek Avenue #36-00
Millenia Tower, Singapore 039192
Phone: (065) 33 77 911
Fax: (065) 33 41 185

EPSON HONG KONG LTD.
Rooms 4706-10, 47/F,
China Resources Bldg.,
26 Harbour Road, Wanchai, Hong Kong
Phone: 2585-4300
Fax: 2827-7083

EPSON TAIWAN TECHNOLOGY & TRADING LTD.
10F, No. 287 Nanking E. Road, Sec. 3,
Taipei, Taiwan, R.O.C.
Phone: (02) 717-7360
Fax: (02) 712-9164

EPSON ITALIA S.p.A.
V.le F.lli Casiraghi 427
20099 Sesto S.Giovanni
MI, Italy
Phone: 2-262331
Fax: 2-2440750

EPSON IBERICA S.A.
Av. de Roma, 18-26
08290 Cerdanyola del Valles
Barcelona, Spain
Phone: 582. 15.00
Fax: 582. 15.55

SEIKO EPSON CORPORATION (Hirooka Office)
80 Harashinden, Hirooka
Shiojiri-shi, Nagano-ken
399-0785 Japan

EPSON PORTUGAL, S.A.
R. do Progresso, 471, 1° Perafita
4460 Matosinhos, Portugal
Phone: (02) 996 14 02
Fax: (02) 996 14 11

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